

# Convection Oven

MODEL MT-200

Service Manual



*Fresh ideas in foodservice equipment*

2812 Grandview Dr. Simpsonville, S.C. 29680, USA  
864-963-3471 <http://www.bkideas.com>

# BKI LIMITED WARRANTY

PO Box 80400 • Simpsonville, SC 29680-0400 • USA  
(864) 963-3471 • Toll Free: (800) 927-6887 • Fax: (864) 963-5316

## WHAT IS COVERED

This warranty covers defects in material and workmanship under normal use, and applies only to the original purchaser providing that:

- ☐ The equipment has not been accidentally or intentionally damaged, altered or misused;
- ☐ The equipment is properly installed, adjusted, operated and maintained in accordance with national and local codes, and in accordance with the installation and operating instructions provided with this product.
- ☐ The serial number rating plate affixed to the equipment has not been defaced or removed.

## WHO IS COVERED

This warranty is extended to the original purchaser and applies only to equipment purchased for use in the U.S.A.

## COVERAGE PERIOD

- ☐ Warranty claims must be received in writing by BKI within one (1) year from date of installation or within one (1) year and three (3) months from date of shipment from the factory, whichever comes first.
- ☐ COB Models: One (1) Year limited parts and labor.
- ☐ COM Models: Two (2) Year limited parts and labor. COM convection ovens also have a two (2) year door warranty.
- ☐ COI Models: Two (2) Year limited parts and labor. Five (5) Year limited door warranty.
- ☐ BevLes Products: Two (2) Year limited parts and labor.
- ☐ Warranty period begins the date of dealer invoice to customer or ninety (90) days after shipment date from BKI, whichever comes first.

## WARRANTY COVERAGE

This warranty covers on-site labor, parts and reasonable travel time and travel expenses of the authorized service representative up to (100) miles round trip and (2) hours travel time and performed during regular, weekday business hours.

## EXCEPTIONS

Any exceptions must be pre-approved in advance and in writing by BKI. The extended door warranty on convection ovens years 3 through 5 is a parts only warranty and does not include labor, travel, mileage or any other charges.

## EXCLUSIONS

- ☐ Negligence or acts of God,
- ☐ Thermostat calibrations after (30) days from equipment installation date,
- ☐ Air and gas adjustments,
- ☐ Light bulbs,
- ☐ Glass doors and door adjustments,
- ☐ Fuses,
- ☐ Adjustments to burner flames and cleaning of pilot burners,
- ☐ Tightening of screws or fasteners,
- ☐ Failures caused by erratic voltages or gas suppliers,
- ☐ Unauthorized repair by anyone other than a BKI Factory Authorized Service Center,
- ☐ Damage in shipment,
- ☐ Alteration, misuse or improper installation,
- ☐ Thermostats and safety valves with broken capillary tubes,
- ☐ Freight – other than normal UPS charges,
- ☐ Ordinary wear and tear,
- ☐ Failure to follow installation and/or operating instructions,
- ☐ Events beyond control of the company.

## INSTALLATION

Leveling, as well as proper installation and check out of all new equipment - per appropriate installation and use materials – is the responsibility of the dealer or installer, not the manufacturer.

## REPLACEMENT PARTS

BKI genuine Factory OEM parts receive a (90) day materials warranty effective from the date of installation by a BKI Factory Authorized Service Center.

Warranty is in lieu of all other warranties, expressed or implied, and all other obligations or liabilities on the manufacturer's part. BKI shall in no event be liable for any special, indirect or consequential damages, or in any event for damages in excess of the purchase price of the unit. The repair or replacement of proven defective parts shall constitute a fulfillment of all obligations under the terms of this warranty.

Asia • Europe • Latin America • North America



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## Introduction

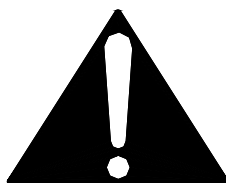
Thank you for purchasing our convection oven. We feel certain that the oven you have purchased will meet your expectations, and will be a trustworthy assistant in your work for a long time to come, providing performance of the highest levels. You will also receive efficient and timely after-sales technical and operational service. Your oven is quick and easy to install. Nonetheless, please CAREFULLY read this manual, and keep it for future use. We hope you enjoy your work!

**NOTICE**

PLEASE READ THIS ENTIRE MANUAL BEFORE OPERATING THE UNIT. If you have any questions, please contact your BKI Distributor. If they are unable to answer your questions, contact the BKI Technical Service Department, toll free: 1-800-927-6887. Outside the U.S., call 1-864-963-3471.

### Safety Precautions

Always follow recommended safety precautions listed in this manual. Below is the safety alert symbol. When you see this symbol on your equipment, be alert to the potential for personal injury or property damage.



### Safety Signs and Messages

The following Safety signs and messages are placed in this manual to provide instructions and identify specific areas where potential hazards exist and special precautions should be taken. Know and understand the meaning of these instructions, signs, and messages. Damage to the equipment, death or serious injury to you or other persons may result if these messages are not followed.

**⚠ DANGER**

This message indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

**⚠ WARNING**

This message indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury.

**⚠ CAUTION**

This message indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

**NOTICE**

This message is used when special information, instructions or identification are required relating to procedures, equipment, tools, capacities and other special data.

## Safety Standards

- This manual is part of the documentation provided with the oven and contains all required information for proper use and maintenance of the convection oven.
- **Carefully read the user's instructions contained in this manual before turning the oven on.** Special attention must be given to the standards concerning the automatic safety and control devices (see page 10).
- The user must carefully read the instructions in it and keep it where it is accessible to all authorized users
- The oven is of a professional type and must be used **only by qualified personnel**, cooking foods in food service facilities.
- Always turn off the main electrical switch after using the oven, especially during maintenance and repair or in the event of long periods of disuse.
- It is advisable to have the oven checked on a yearly basis by an authorized technical service center.
- The owner of the oven must periodically train their staff on the use of the machines and provide them with safety instructions.
- During cooking, the external parts of the oven (e.g. door glass) may get hot. Be careful when touching them.

## Data Plate

The data plate containing the oven characteristics is glued to the back.

## Power Supply Terminal Board

The power supply terminal block is inside the right side of the oven. A small data plate positioned near the terminal block states the types of connections which are possible.

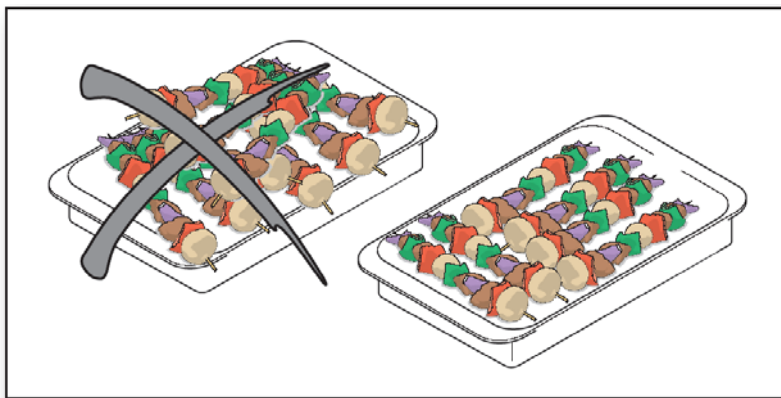
## Technical Data

Dimensions	No. of Pans or Racks	Power Supply	Power
External dimensions: 27"x21 3/4"x25 1/4"  Internal dimensions: 21 1/2"x14 1/2"x16 1/8"  Rack dimensions: 1/2 size	4	1Phase, 15 Amp, 240V or 208V, 60Hz, Plug NEMA 6-20P standard	Kw 3.2

## Operation

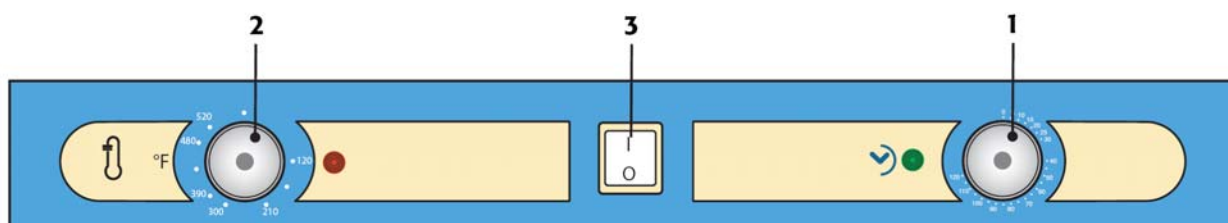
### General Instructions for Use

- The oven may be used to bake creams, cookies, cakes, sauces and pizza, for au gratin cooking and for defrosting frozen food convection ovens.
- Avoid adding salt to foods in the cooking chamber.
- Try to distribute foods evenly in the pans, avoiding accumulations.



- Between one level and the next there must be a space of at least 1 1/2". Hot air must be able to circulate both above and below the food in order for it.
- Do not use pans with sides that are higher than necessary. The sides create a barrier to air circulation.
- When using the oven for the first time, it is advisable to run it empty at maximum temperature for about an hour. This will eliminate any unpleasant odors from protective lubricants used in the factory.
- Leave room between dishes on the same level.
- Preheat the oven. It is always better to place the food in a pre-heated oven.
- During cooking, racks and pans reach very high temperatures. Use caution to prevent burns.

### Controls and Indicators



Key #	Control	Description
1	TIME SETTING KNOB	Sets cooking time from 0 - 120 minutes or to continuous operation.
2	TEMPERATURE SETTING KNOB	Sets chamber temperature from 50 to 520°F.
3	ON/OFF MAIN SWITCH	Energizes/de-energizes the oven.

**Start-Up and Use**

1. To start the oven, press the main switch (3) ON/OFF.
2. Set the cooking time by turning the time setting knob (1).
3. Then use knob (2) to set the desired cooking temperature. If knob (2) is left in position '0', only the light and fan will operate, and the oven chamber will not heat up.

**Switching Off**

1. Cooking ends automatically when the cooking time set on knob (1) has expired.
2. Nonetheless, turn all knobs to "O" and turn off the main switch (3) ON/OFF.

## Installation

### Safety Standards

#### **⚠ WARNING**

The installer must read this booklet carefully before installing the convection oven.

Installation and subsequent maintenance, cleaning, inspection and repairs must be carried out with the electrical power supply disconnected.

Installation of the oven must be in compliance with current standards in the country of use, otherwise BKI shall not honor the warranty in the event of direct or indirect damage.

Installation, adjustment and assistance are to be carried out by qualified personnel in compliance with current accident prevention legislation in the country of use. The installer must also check for any fire prevention regulations.

BKI shall not be held liable for any damage arising from improper use of the convection oven, unauthorized modifications and anything not covered by this manual.

### Environmental Standards

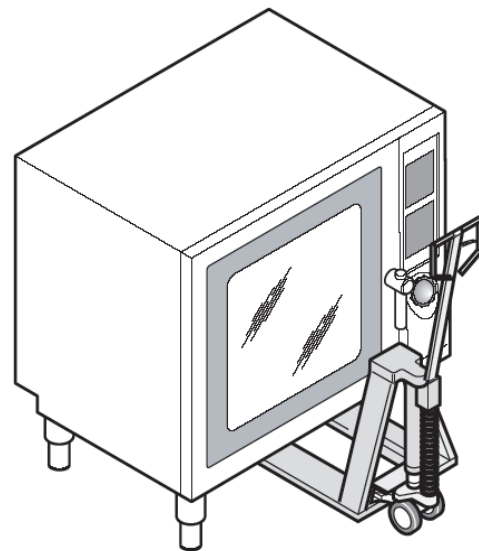
All materials used for packaging are compatible with environmental protection standards. They may be stored without any hazard, or disposed of in accordance with current laws in the country of use. Do not leave the plastic coverings within reach of children or animals as they are potentially hazardous. The plastic components which can be disposed of and recycled are marked as follows:

- POLYETHYLENE: packaging outer film, instructions bag, etc.
- POLYPROPYLENE: clips, etc.

### Transport and Unpacking

Any movement of the oven must be carried out by suitable means such as a forklift or pallet loader. These must be at least half as large as the convection oven. If it is necessary to store the oven temporarily, keep it in a covered, ventilated place at a temperature from 14°F to 122°F, with humidity no higher than 95%.

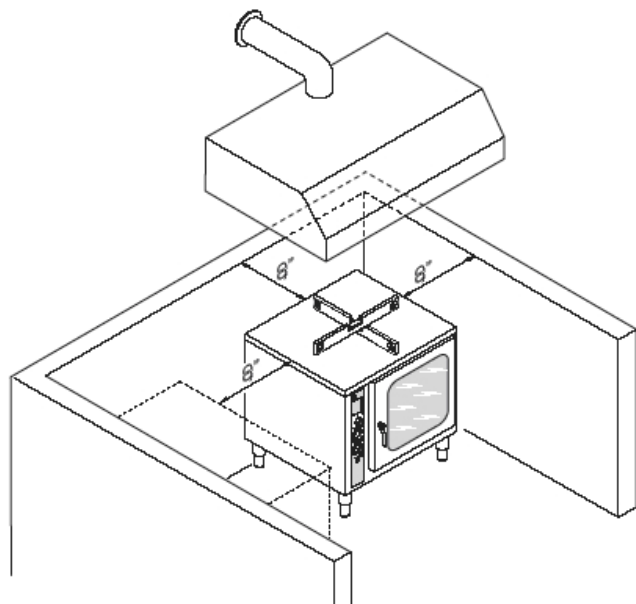
Use protective gloves and remove the packaging. Lift the oven with a forklift, remove the base and place it in its intended location. After removing the packaging, immediately check the condition of the oven. If in doubt, do not use the oven. Contact an authorized retailer.



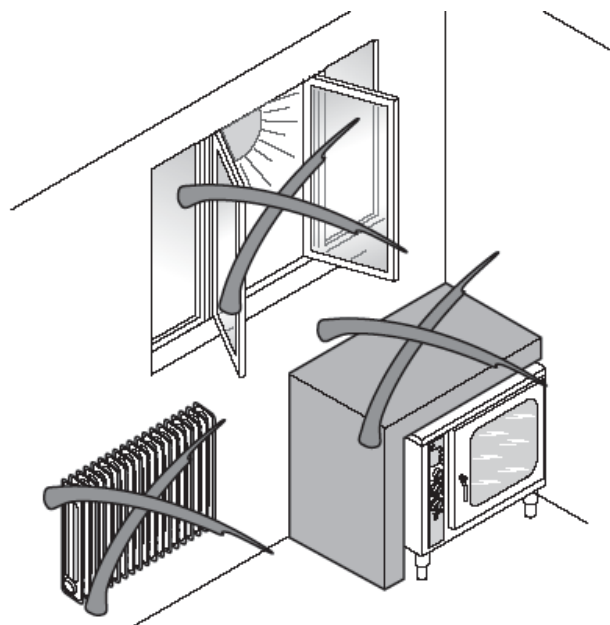


## Installation Instructions

1. Place the machine in its place of intended use in compliance with the following instructions:
  - Check that there is enough space (minimum 8") from any walls or obstacles which may prevent proper air flow.

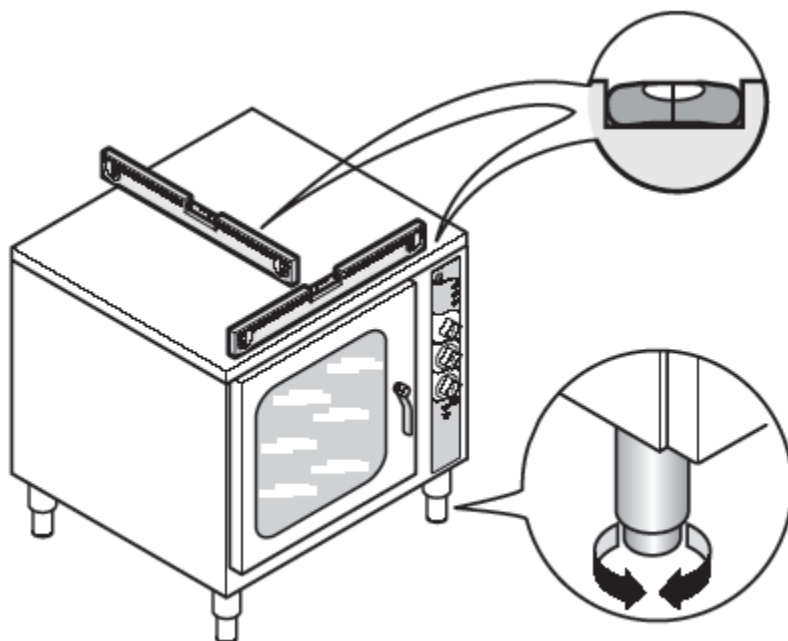


- Check that maintenance can be performed with a certain freedom of movement.
- Avoid placing the oven in places with poor air circulation, in places exposed to sunlight, where there are high temperatures, near heat sources or in windy locations.



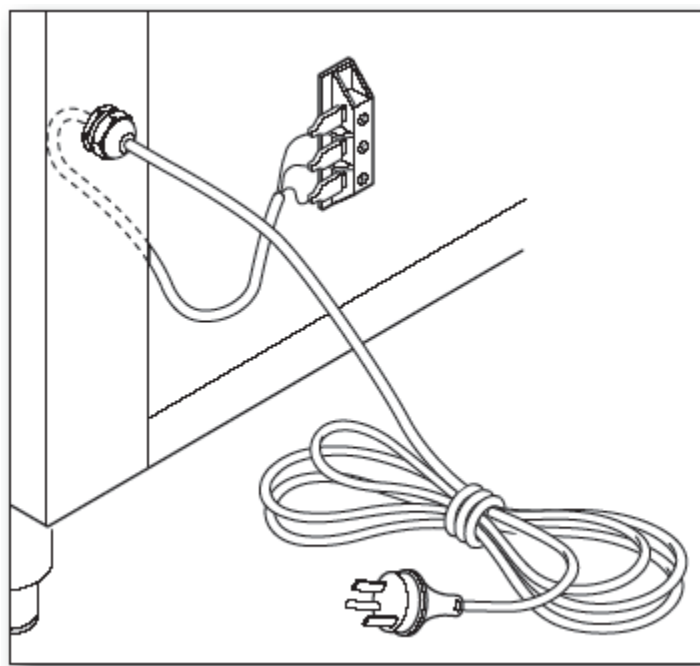
- Ambient air temperature must not exceed 89°F. Above that temperature, proper operation of the oven cannot be ensured.
  - Always install the oven under a properly operating aspiration hood for the extraction of vapors.
2. Remove the film which covers some parts of the oven before starting to use it.

3. Clean all substances, including glue residue. Do not use abrasive substances.
4. Position the machine so that it is perfectly level and set the height by means of the leveling feet.



### Electrical Connections

The oven is setup for operation at the voltage set forth on the technical data plate. All ovens are provided with a power cord.



The flexible cable for connection to the electrical mains must not have characteristics which are less than those of a type with rubber insulation mod. H07RN F and it must have a section which corresponds with that set forth in the section "Technical Data" of the oven. The cable must also be anchored to the frame with the cable clamp, the screw of which can be reached through a hole in the frame. It must in any case

be positioned in such a way that at no point does it reach a temperature which is 122°F greater than the ambient temperature. It must be type SJTO plug 20A 250V P section 3xAWG12.

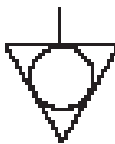
The connection to the electrical line must be made by placing an automatic switch of sufficient capacity (see "Technical data" of the oven) and with an opening distance between contacts of at least 3 mm.

Also, during operation of the oven, the power supply must not vary from the nominal voltage value by  $\pm 10\%$ .

The oven **MUST** be earthed by means of the terminal which carries the earth symbol on the connection board.



It must also be inserted in an equipotential system (the efficiency of which must be checked in accordance with current standards) using the terminal with the equipotential symbol. It is located near the electrical cable entry on the panel of the oven bottom.



**The manufacturer will not be held liable if this accident prevention standard is not adhered to.**

## ***Automatic Safety and Control Devices of the Oven***

### **Protection of the Auxiliary Electrical Circuit**

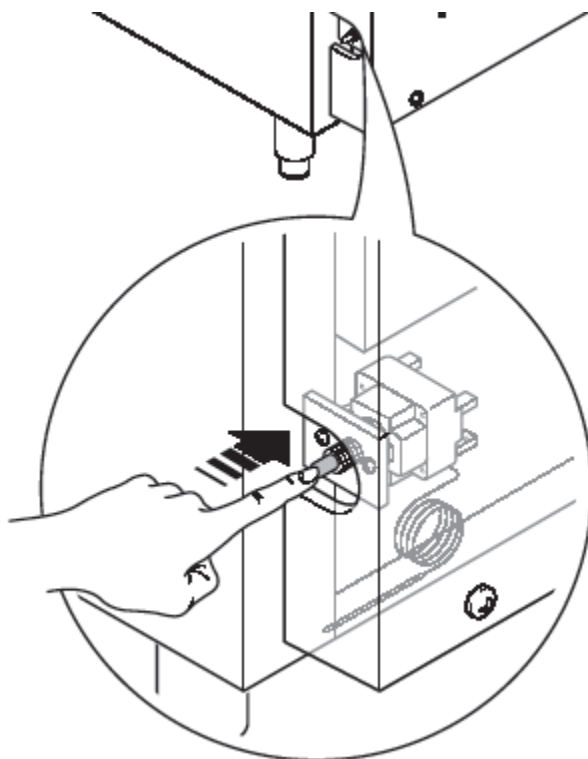
It is checked by the fuses positioned on a terminal block at the line entry.

### **Protection of the Chamber Fan**

A remote switch stops the fan motor in the event of a malfunction or overload. It is located behind the oven and must be reset manually. When it cuts in, it stops the motor and shuts off the heating elements.

### **Oven Chamber Safety Thermostat**

The safety thermostat disconnects the heating elements if the temperature in the oven chamber is too high (644°F). It must be reset manually. If it activates, technical service must be notified. All components are protected by the following type of fuse: **CLASS CC,G 600V 20A.**



## Maintenance

**⚠ CAUTION**

Failure to comply with the maintenance below could result in a serious accident.

**⚠ WARNING**

Electrocution, equipment failure or property damage could result if an unlicensed electrician performs electrical repair. Ensure that a licensed electrician performs electrical repair.

### ***Routine Maintenance***

**⚠ DANGER**

Before performing maintenance, unplug the oven.

During cleaning, use protective gloves, mask and garments as required by standards.

At the end of each workday clean the inside of the oven with appropriate convection ovens following the suggestions of your supplier. Do not use corrosive or acidic convection ovens, or convection ovens which are not suitable for this type of cleaning.

To make cleaning easier, remove the lateral diffusers by lifting them slightly so they are free of the holding pegs.

Clean the stainless steel parts daily with lukewarm soapy water, and rinse thoroughly. Then dry.

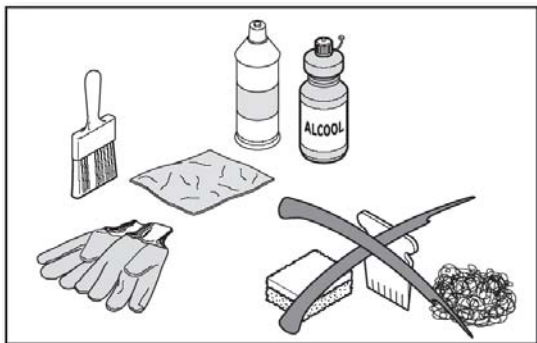
Absolutely do not clean the stainless steel with steel wool or common steel brushes, since they may leave ferrous particles which may oxidize, thus causing rust spots.

Stainless steel wool can be used in the direction of the satin finish.

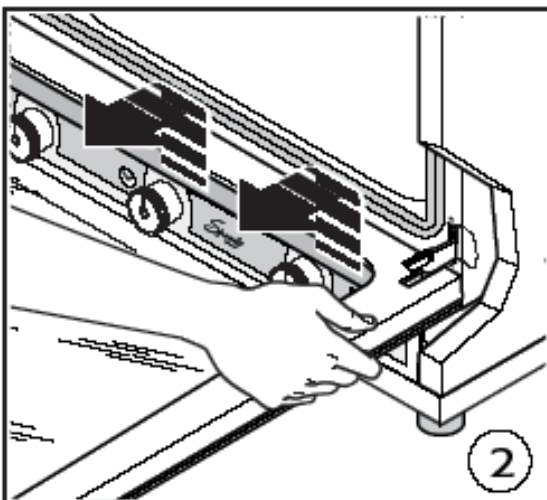
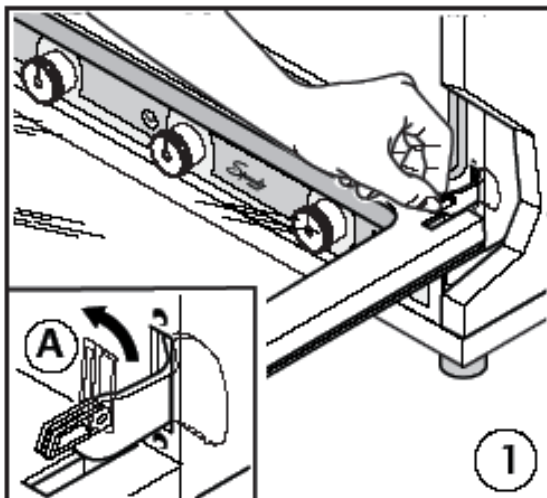
If the oven is not used for long periods, use a cotton ball to lay a coat of petroleum jelly on all surfaces; also regularly ventilate the rooms.

## Oven Chamber Cleaning

- Remove any food and/or fat residues from the oven chamber after each cooking cycle. The combination of fat, heat and forced circulation dirties the oven. Only by cleaning the oven daily is it possible to avoid difficult cleaning operations.
- To clean the oven, use a suitable de-greasing convection oven (non-foaming) as suggested by your detergent retailer. A spray is preferable to reach behind the protection shield. Do not use abrasive or corrosive substances, scrapers or steel wool.



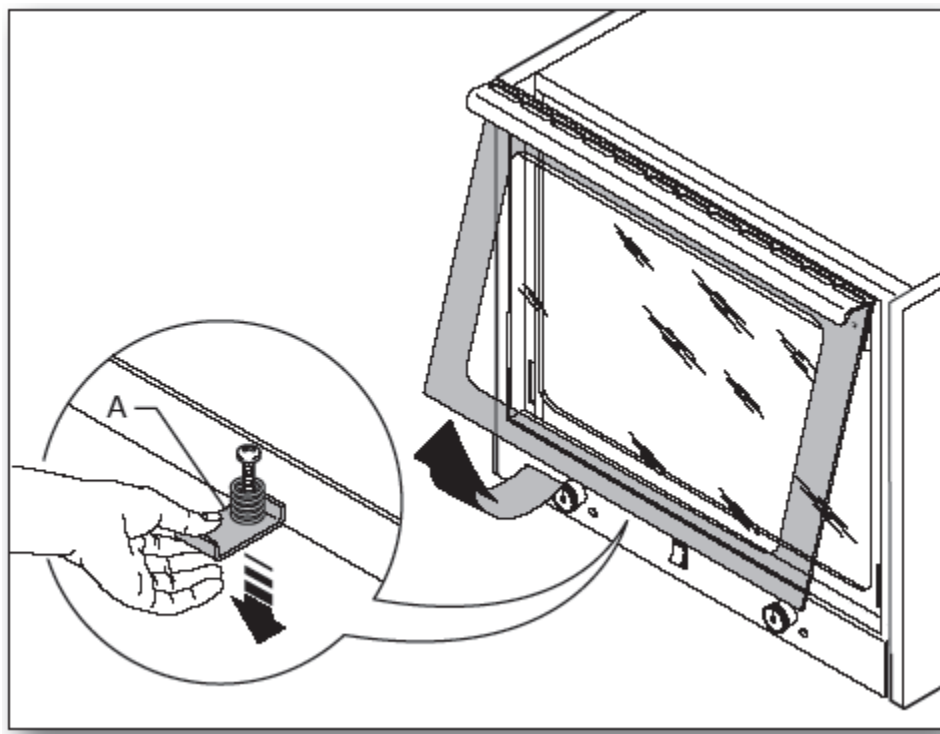
- To make cleaning the oven chamber easier, it is possible to remove the door completely in a few simple steps as shown in figure 13. Follow the sequence in reverse order to re-install the door.



- Adhere to safety instructions included with cleaning convection ovens for the protection of skin and eyes. When cleaning, proceed as follows:
  1. Heat the oven chamber to approx. 158 - 176°F and clean it using the de-greasing detergent in the recommended quantities.
  2. Close the oven and heat it.
  3. Let the cleansing convection oven act for 20-30 minutes and then turn the oven off.
  4. Slowly open the oven with care to avoid eye and skin damage.
  5. Remove the racks or pans from the oven, remove the rack supports attached to the side and shield, remove the shield by loosening the fastening screws. Wash separately (they can also be placed in the dishwasher).
  6. Clean and rinse the oven and fan with water.
  7. Re-install the shield and the rack supports.
  8. Dry the oven by turning the CONVECTION cycle on.

## Cleaning the Door Glass

To reach the inside glass of the oven door, use the lower latch "A", open outer glass "B" raising it from the bottom upwards. This will make it possible to get inside the glass for normal cleaning. Upon completion, lose the external glass by pushing it slowly downwards **until the click is heard of insertion in component "A"**.



## Cleaning the Fan

Periodically check the condition of the fan. Make sure that there is not too much grease on the blades since it may slow motor rotation (which in turn may lead to overheating) and uneven heat distribution (resulting in uneven cooking).

### ***What to Do In Case of a Breakdown or Long Periods of Inactivity***

1. Switch off the main electrical switch.
2. Set all control panel knobs to zero.
3. Inform technical assistance (only in case of a malfunction).
4. Clean the oven inside and out.

### ***Troubleshooting***

Refer to the table below for troubleshooting information.

PROBLEM	PROBABLE CAUSE	REMEDY
Oven does not turn on	Unit unplugged	Check the plug connection and reconnect if necessary
	Fuses	Check the fuses and replace them if necessary
	Cables/terminal block	Check the cables connection for loose wire and reconnect if necessary
	Switch	Check the switch and the voltage at the inlet and outlet. Replace switch if necessary
	Safety thermostat	Check the safety thermostat and push the red button
Oven does not warm up	Resistor contactor	Check the voltage at the inlet and outlet of the contactor and replace if necessary
	Heating element burn out	Replace the heating element
		Check the temperature with a manual thermometer and if necessary replace the thermostat
Lights not lit	Switch/lights	Check the switch and the lights and replace if necessary
Motors do not work	Motor contactor/Motor	Check the voltage at the inlet and outlet of the contactor. Check the motor and replace the contactor or the motor if necessary
Oven suddenly stops	Safety thermostat	Push the red button on the thermostat
	Short circuit	Check the fuses and replace them if necessary, if the failure persists check all parts with an appropriate tester in order to find which is the part to replace



## Repair Procedures

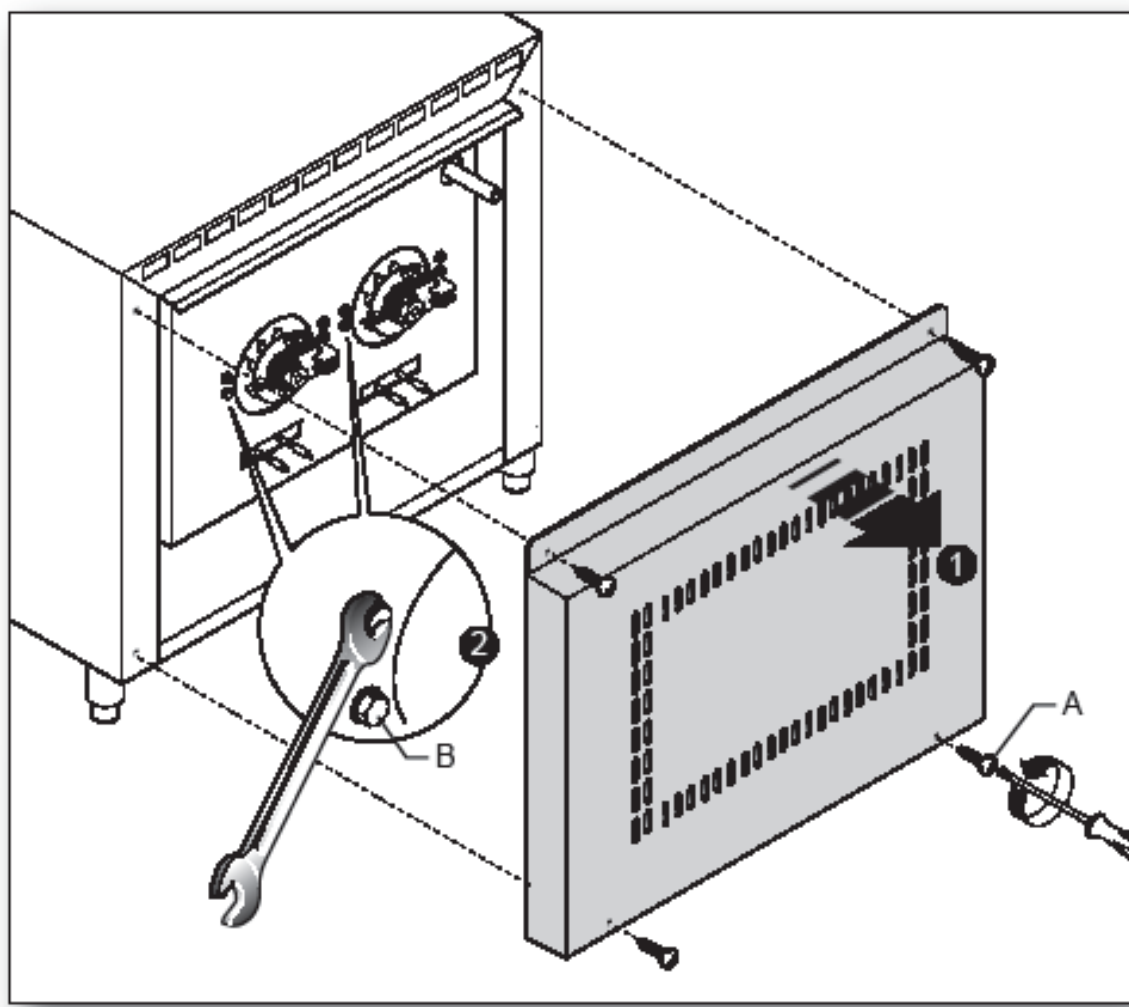
### **⚠ WARNING**

Replacement of spare parts must be performed exclusively by qualified and AUTHORIZED personnel.

Turn the main switch OFF and unplug the convection oven before carrying out any spare parts replacement.

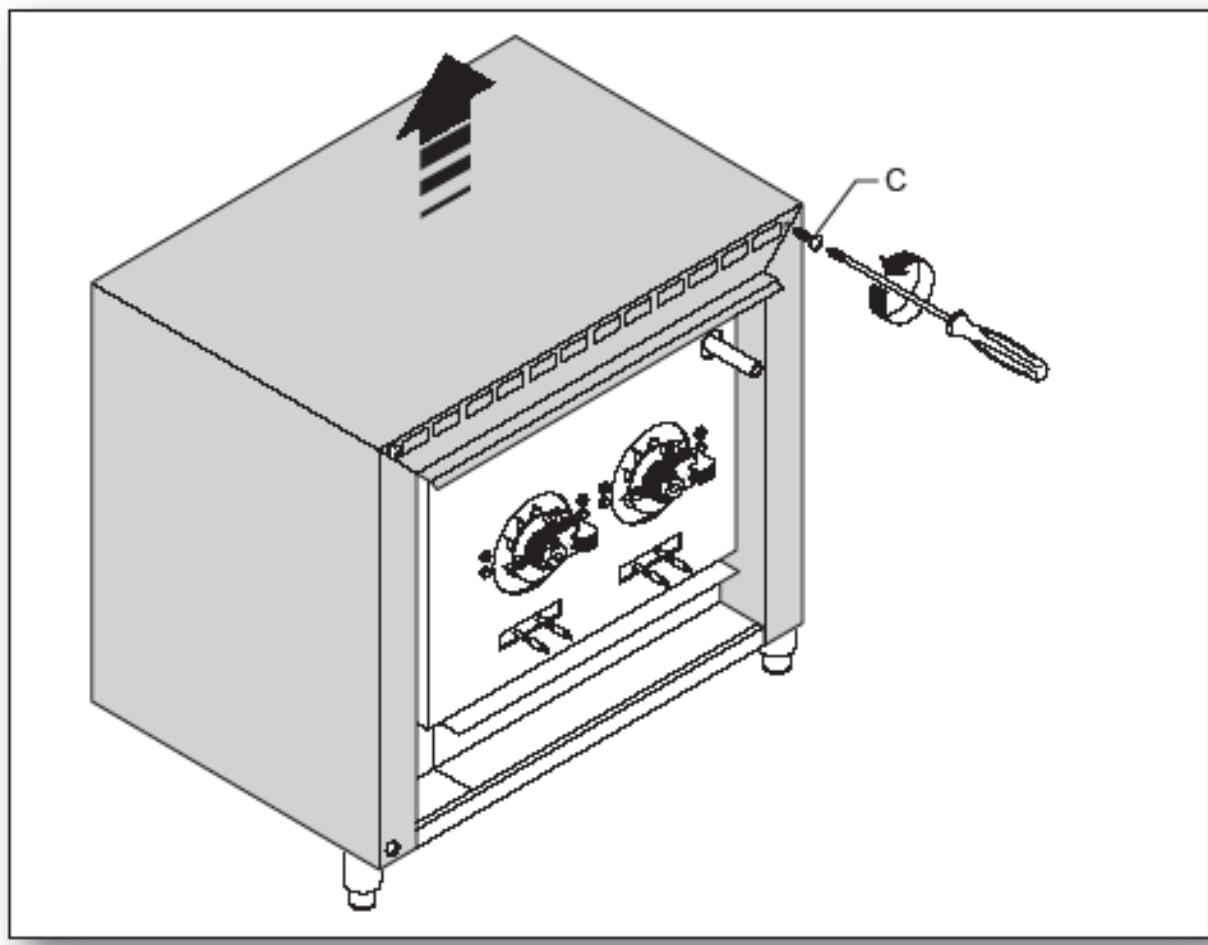
## Replacement of Motors

It is necessary to remove the back by removing the 4 fastening screws "A" and the 4 screws "B" that support them.



## Outer Coverings

Remove the 4 rear fastening screws "C".



## Bulb, Heating Element and Motor Fan

It is necessary to access the inside of the oven, first removing pans, racks and related supports, and then the conveyor.

### 30W Motor

Remove the fan by following the procedure outlined above, disconnect the motor from the electrical system, loosen the 4 screws and replace the motor. Before re-installing the fan, check that there is no friction between the motor shaft and the ring nut located inside the oven. If there is, loosen the fixing screws of the ring nut and re-tighten them after eliminating the friction and having centered the ring nut on the motor shaft.

## Heating Elements

Disconnect the heating element connections outside the oven chamber. Loosen the heating elements from inside the oven chamber and replace them.

## Electro-Mechanical Controls

All the electric components are visible. To replace them it is necessary to disconnect the attachments, remove the knobs, unscrew the fastening screws or nuts and replace them.

### NOTICE

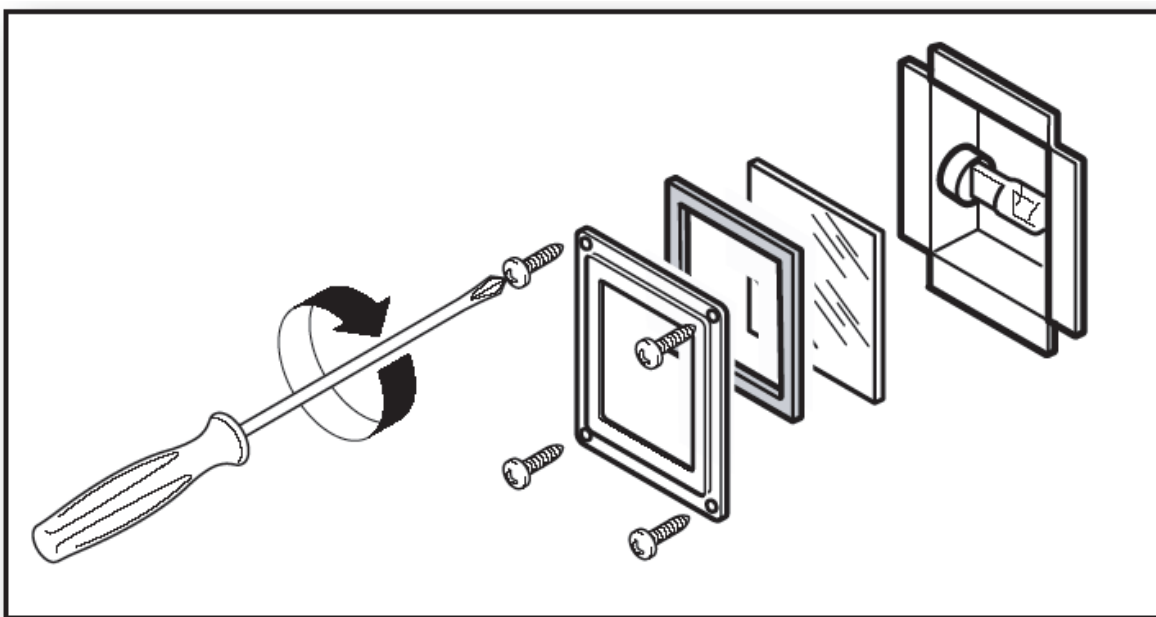
For the adjustable thermostat, safety thermostat and thermometer, unscrew the guard and the supports and remove the bulbs. Once they have been replaced use high-temperature resistant silicone to seal the holes. After replacement, reseal the holes for the passage of the capillaries with high temperature silicone.

## Chamber Face Gasket

It is simply pressed in. Pull to remove it. NB: Before removing it, note its position carefully so as to place the new one in the same position.

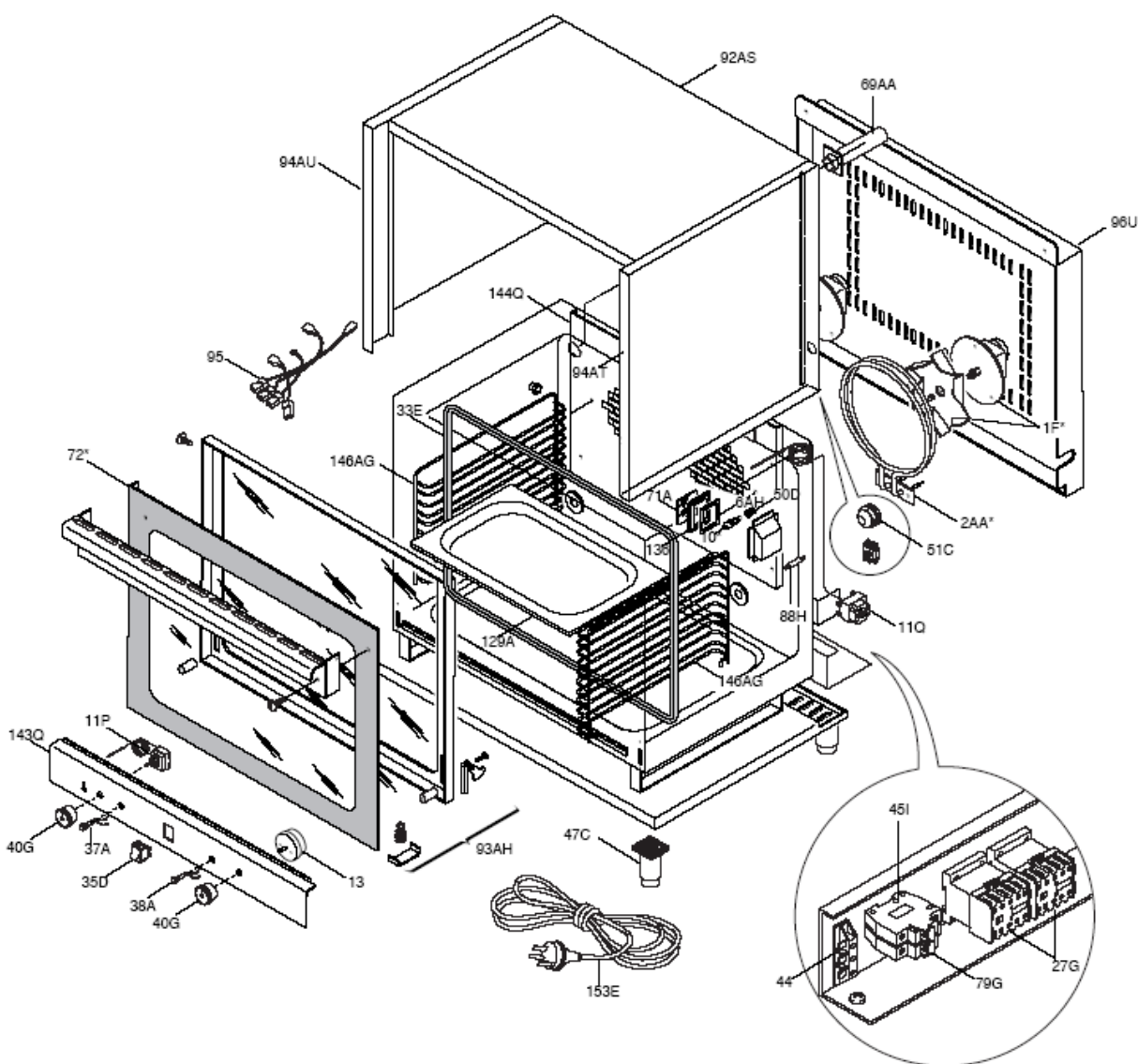
## Replacement of Chamber Light and Glass Gasket

Check and replace the glass gasket and any lights in the oven chamber.



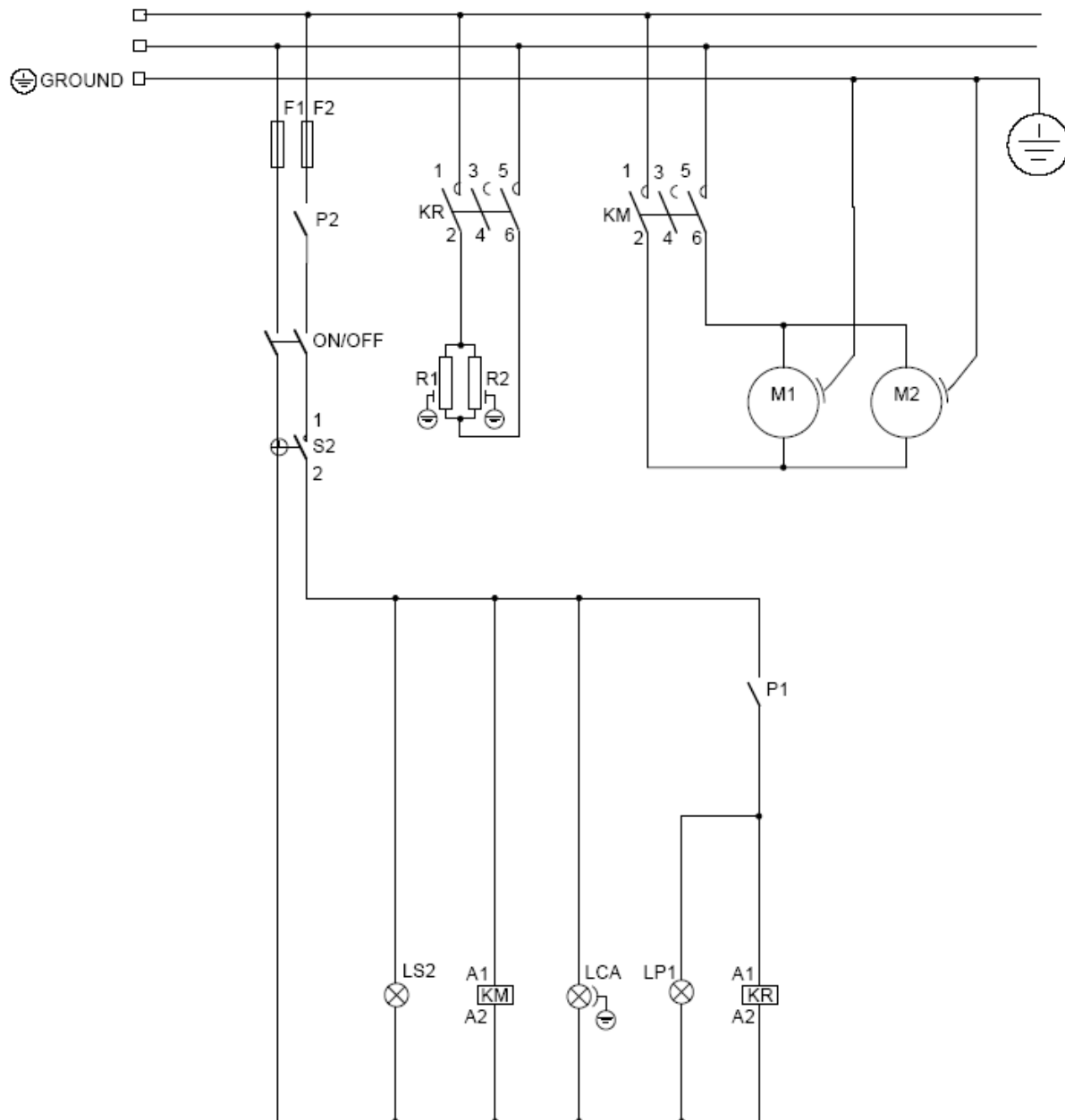
## Replacement Parts

Use the information in this section to identify replacement parts. To order replacement parts, call your local BKI sales and service representative. Before calling, please note the serial number on the rating tag affixed to the unit.



POS.	CODE	BKI #	DESCRIPTION
96U	35350	MT0029	Back side
51C	471	MT0022	Cable Lock
10 I	35,003,001	MT0015	Chamber Lamp 15W
136	10306	MT0018	Chamber Lamp Frame
6AH I	10304	MT0016	Chamber Lamp Gasket
71A	10305	MT0017	Chamber Lamp Glass
93AH	35365	MT0024	Complete Door
27G	10024	MT0006	Contactor
144Q	35355	MT0033	Conveyor
88H	12167	MT0034	Conveyor Pin
92AS	35360	MT0035	Cover
7Z I	15203.01	MT0013	Door glass
153E	10586	MT0021	Flexible cord 3X12AWG SJTO
47C	0364A	MT0023	Foot
143Q	16754AF0	MT0028	Front Panel
45I	10339	MT0011	Fuseholder 2x20A
79G	10338	MT0010	Fuses 20A 10,3x38 600V
33E	14075	MT0009	Gasket
38A	616	MT0007	Green Light 250V
39P	35370	MT0031	Handle
2AA I	163	MT0002 MT0039	Heating Element 1500W 240V 60Hz Heating Element 1500W 208V
24	15062	MT0030	Hinge
40G	15021	MT0019	Knob
50D	10342	MT0014	Lampholder
94AU	35374	MT0037 MT0038	Profile, Front, Left Profile Fixings
1F I	14	MT0001 MT0040	Motor 21W 240V 60Hz Motor 21W 208V
37A	617	MT0008	Red Light 250V
94AT	35373	MT0036 MT0038	Profile, Front, Right Profile Fixings
11Q	166	MT0005	Safety Thermostat 340°C (High Limit)
35D	10353	MT0020	Switch
44	12	MT0012	Terminal block
11P	596	MT0003	Thermostat 520°F
13	50	MT0004	Timer 120min
129A	20045	MT0026	Tray
146AG	20	MT0027	Trayholder
69AA	35379	MT0032	Vent hole
95	10951	MT0025	Wiring

## Wiring Diagrams



## **Notes**



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